L-165

Soil Nutrients

Removed by Some Crops

TEXAS AGRICULTURAL EXTENSION SERVICE
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Table 2. AMOUNT OF PLANT NUTRIENTS REMOVED*

Crop	Yield	Lb. of nitrogen (N)	Lb. of phosphorus (P_2O_5)	Lb. of potassium (K_2O)	Lb. of calcium (CaO)
Field Crops					
Barley grain	40 bu.	40	18	13	1
Corn grain	70 bu.	63	25	18	1
Corn and cob	1 ton	26	11	8	1
Cotton lint and seed	750 lb. lint	60	30	20	5
Flax grain	35 bu.	75	31	14	7
Grain sorghum grain	2000 lb.	36	11	8	1
Oat grain	65 bu.	38	15	10	3
Peanuts-nuts and hulls	1 ton	80	15	10	1
Wheat grain	35 bu.	42	20	11	1
Rice grain	12 bbl.	27	10	5	3
Forage Crops					
Alfalfa hay	4 tons	180	40	180	112
Alfalfa green cut	1 ton	15	3	14	11
Red clover hay	2 tons	80	20	70	54
Sweetclover	5 tons	185	45	165	**
Lespedeza hay	2 tons	125	25	90	**
Cowpea hay	1 ton	60	12	35	24
Peanut hay	1 ton	32	5	35	33
Prairie hay	1 ton	18	5	29	24
Coastal Bermuda hay	8 tons	300	70	272	59
Vegetable Crops					
Cabbage	20 tons	130	35	130	2
Potatoes, Irish	500 bu.	100	40	190	4
Potatoes, sweet	300 bu.	45	15	75	1
Tomatoes	20 tons	120	40	160	7
Spinach	9 tons	90	30	45	**

* Sources of data: Texas Agr. Exp. Sta. Bul. 461 (Rev.)
Better Crops with Plant Food, p. 10-11, Vol. XLI, No. 10, Dec. 1957
Our Land and Its Care, Third Edition, American Plant Food Council

**No data available.

SOIL NUTRIENTS REMOVED BY SOME CROPS

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High yields of top-quality feed, forage and vegetables can be produced by a well-planned soil improvement program and the use of fertilizer. Data in this leaflet shows the average composition of nutrients in certain crops and their general nutrient needs.

The values listed are average for representative conditions. The actual quantity will vary depending on fertilizer used, climatic conditions, soil conditions, level of nutrients in the soil, variety of crop, as well as total yield.

An example of this is in Table 1 below.

TABLE 1. NITROGEN REMOVED AT DIFFERENT RATES

RATE	YIELD BU/A	% IN GRAIN	TOTAL LB. REMOVED	LB. REMOVED PER BU.
NONE	35	1.01	20	0.57
20 #	55	1.16	36	0.65
40 #	59	1.19	39	0.67
80 #	70	1.35	53	0.76

While these values indicate the general nutrient needs of crops, *they cannot be used to determine fertility needs*. The soil will supply a portion, and in some cases, all of the nutrients needed. If such is the case, to add nutrients in a commercial fertilizer would not be profitable.

The best method of determining nutrient needs is to have the soil tested. This will result in the most efficient use of soil resources as well as the commercial fertilizer and will mean more profitable return.

For information on soil testing, see your local county agricultural agent for instructions and procedures on how to take soil samples and where to send them.

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